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DATA LINK

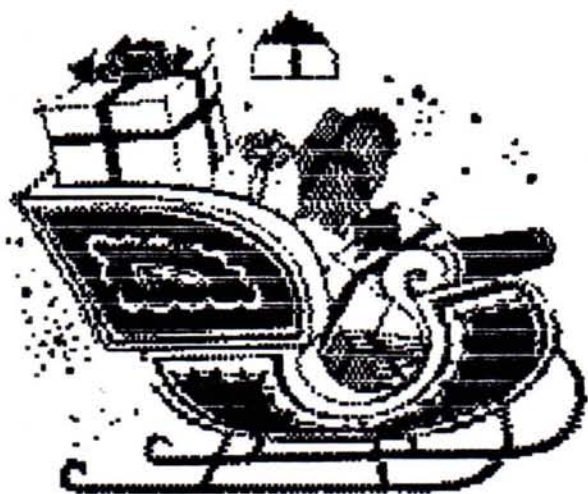
VOLUME 5, ISSUE 6

DECEMBER, 1987

The official newsletter of the Modesto Atari Computer Club

Members: Please use the special insert in this newsletter!

**The new MdCC board of directors wish
you and yours a very Merry Christmas
and a safe and prosperous New Year.**



**President: Lloyd Nicholas
Vice-President: Don Hansen
Secretary: Leta Long
Treasurer: Ken Long
St Librarian: Mike Marcellin
8-bit Librarian: Dave Kapka
Editor: Rick Paderes**

Don't miss this meeting:

Christmas shopping tips

Word processing

Lots of demos

See you there!

THE ST LIBRARY

Hi! I'm Mike Marcellin, the new ST Librarian. I'm also new to M.A.C.C. and Atari, but not computers. However, I am new to the library, at least temporarily. Fortunately, Robert Elledge, the out-going ST Librarian, has graciously offered to help me through this transfer of information.

"Thumbing" through the library is both time-consuming and rewarding. It is a large collection of games, utilities, graphics and more, all available to M.A.C.C. members. Also available are lists showing the contents of the ST Library disks. You can get your copies at the next (or any other) meeting. If you have any questions or need any club disks, see me at the meeting or call me at: 526-9248 from 5-9 PM.

Part of the reason that I'm ST Librarian is that I wanted to be active, to help with the club. You too can experience the warm glow born from helping one's fellow man without having to bear the awesome weight of a Club Officer's Badge. A portion of this newsletter has been set aside for your questions, comments, etc. Jot down some thoughts and bring'em to the meeting. Signatures are optional.



Editors Notes

Well I can't really believe it, but here I am, the club's NEW newsletter editor. After 5 years of being the club's secretary I was looking forward to taking a break from club business. But after being gently 'coerced' I've found that this is not so bad after all.

In case you're interested, I become the club's fifth editor in six years. Those that have come before me should be fairly familiar names. They are, in order, Steve Hibbard, Sherry Martin, Lloyd Nicholas, and Roger Espinola. I thank them all for building the newsletter into what it is today and I hope I can continue to build on such a solid foundation.

In the coming year I will be looking to all club members to help with this newsletter. I hope you will all contribute something. Contributions can come in many different forms, all of which will be greatly appreciated. Let me list a few ways you can help:

1. Write articles -
 - a. about some technical aspect of your machine(s)
 - b. about an interesting computer related experience
 - c. a tutorial to help others
2. Write computer fiction
3. Write computer poetry
4. Draw computer cartoons
5. Gather information I can use in the newsletter
 - a. from books, magazines, or newspapers
 - b. download it from your favorite service or bbs
6. Write programs or demos we can publish here
7. Convince (or coerce) someone to do one of the above.

Contributions can be turned in any form; hand-written, typed, on disk (8-bit or 16 bit), carved in stone, or drawn with fingerpaint. I doesn't matter, I'll figure out a way to get it into the computer. This is your newsletter. Please find a way to help out. 'Til next month....THANKS for your help (in advance). Rick Paderes - Editor

Running ATARIWRITER PLUS With SPARTADOS on the XL

by Milt Ingram, Portland Atari Club

[From the Portland Atari Club Newsletter]

AtariWriter Plus (AW+) is great, but... Every time I use it I have unkind thoughts about the people at Atari who seem to be determined to prevent me from using some of the features I like best about my 800XL. These include a 256K expanded memory and U.S.Doubler equipped 1050 drives used with the SpartaDos operating system. I could have a 128K ramdisk to allow rapid switching between several files. I could use double density for added file capacity and time/date stamping of files, using the R-TIME 8 cartridge or the SpartaDos clock.

Unfortunately, none of this seemed possible because of the AW+ was uplied on a copy protected "boot" disk. Then, along came the article by Carolyn Hoglin in the July '87 Antic Magazine, explaining how she adapted the program to run with TOPDOS. I determined that I would do the same for SpartaDos and include the ramdisk and time and date stamped files. I chose not to alter the original AW+ disk, but came up with a method which uses a batch file to perform the entire boot operation. A disk swap is necessary, but everything else is automatic.

Here's how it can be done. First, initialize a SpartaDos disk using X32D.DOS (SpartaDos version 3.2), and copy the SpartaDos files RD.COM and TDLINE.COM to it. Then, onto this same disk copy the AUTORUN.SYS file from the AW+ disk and rename it WRITE.COM. Finally, create the following STARTUP.BAT (batch) file:

```
TDLINE
RD D3: /E
COPY WRITE.COM D3:
;
;REMOVE BOOT DISK AND INSERT
;ATARIWRITER+ DISK IN DRIVE 1
;
PAUSE
TD OFF
BASIC OFF
D3:WRITE
```

When this disk is booted, it performs the following operations:

TDLINE - sets a time and date clock from the R-TIME 8 cartridge. If you don't have the R-TIME 8 cartridge, use the commands TIME and DATE to initialize the clock and calendar.

RD D3: /E - sets up and formats a ramdisk in the top 128K of memory. Note: this leaves 128K available to run the 130XE version of AW+.

COPY WRITE.COM D3: - copies the program WRITE.COM (the autorun.sys loader program from the AW+ disk) to the ramdisk (D3:).

The next two lines are a prompt to replace the boot disk with the AW+ disk. PAUSE - prints a prompt to "PRESS ANY KEY TO CONTINUE" after swapping disks [Ed. Note- if you use commands TIME and DATE to initialize the clock and calendar, the batch loader process will stop so you can enter the time & date. If you remember to swap disks, you can do away with the prompts and PAUSE].

TD OFF - turns off the screen display of time and date, but leaves the internal clock active to time/date stamp disk files.

BASIC OFF - turns off Basic. Don't have to hold down OPTION key during boot.

D3:WRITE - loads and runs the loader program from ramdisk. It then loads AW+ from drive 1.

PLOAD and SAVE will now work with either single or double density disks. Double density disks will need to be formatted ahead of time.

The built-in FORMAT command works from the DUP.SYS file on the disk and produces only DOS 2.0 format. This will still work, as SpartaDos 3.2 can read most Atari formats. You just lose the extra capacity. Also, the INDEX command will show the disk directory in DOS 2.0 format, without the time and date.

(Editor's note - Thanks to Robert Johnstone for typing in this article)

(NEOCHROME ANIMATION from page 6)

across the screen as the parrot does. So there isn't any real good way to view your picture in a slide show program. If the guy who wrote that SLIDEANI.PRG would make his source code available, then maybe I could remove the moving sequence and give the user the option of a file selector box to start the animation sequence.

If you don't dabble very often in Neochrome, you may be interested to know of other unique features that neither DEGAS nor DEGAS ELITE offer. The Jackknife icon allows you to cut around irregular shapes (rather than a whole rectangle) to copy into the cut buffer. When moving an object, you have the option of moving it BEHIND the rest of the picture rather than on top. Also unique are on-screen X-Y coordinates, color fill while in magnify mode, and automatic centering of text.

I personally feel that selecting a color from the palette is much easier than with DEGAS ELITE's confusing color palette. And I like the way circles, rectangles, and lines are drawn "real-time" as opposed to the ghost outline method of DEGAS.

I admit, though, that I was rather disappointed that version 1.0 as the official "final" release is not actually finished. There is still one blank space left in the icon menu. The animation feature is of course unfinished. And when are they ever going to make the fill patterns that are already built into GEM available? Also, there are 92 kilobytes set aside as "reserved" in every Neochrome picture file. This is a lot of extra padding for SOMETHING. Lastly, the most limiting factor is that it only works in low resolution. Maybe someday, Atari will finish Neochrome. Unfortunately, it will be long after GDOS, AMY, Blitter, etc., etc...

(Editor's note - Thanks to Roger Espinola for typing in this article)

DOS 2.0/2.5 File Structure by Mills Perry

From PACUS Report, Packerland
Atari Computer Users Society, 9/87
by way of Michigan Atari General
Information Conference

Disk Structure.

Single Density:

1 disk = 720 sectors
1 sector = 128 bytes
Total of 92,160 bytes
707 usable sectors
13 reserved sectors

DOS 2.5 Enhanced Density:

1 disk = 1040 sectors
1 sector = 128 bytes
Total of 133,120 bytes
1010 usable sectors
13 reserved sectors
16 hidden sectors

Reserved DOS Sectors:

0 Not used
1 - 3 Boot sectors
360 VTOC sector
361-368 Disk directory
1024-1039 Hidden sectors, unavailable
to DOS 2.5, but accessible through
CIO. Everything else is yours.

Sector Types.

1. Data Sector
2. Boot Sector
3. Directory Sector
4. VTOC Sector

I. Data Sectors

These are the sectors on the disk that you are able to use.

Bytes 0 - 124 your data
Bytes 125 - 127 linkage bytes

Linkage structure:

File number - 6 bit number
Byte 125 bits 7-2
Next sector in file - 10 bit
number
Byte 125 bits 1-0
Byte 126 bits 7-0
Bytes used in sector - 8 bit
number
Byte 127

(continued on page 9)

(DOS File Structure from page 7)

Binary run files are distinguished from other data files by six bytes of header information.

0-1 Always contain \$FFFF
2-3 Start address of program
4-5 End address of program

II. Directory sectors.

There are 8 directory sectors containing file name and other information on all your files. Each sector has space for eight file entries. Multiplied by eight sectors gives a maximum of 64 files per disk. Each entry has the following format:

0 Status byte:
7 = file deleted bit
6 = file is in use bit
5 = file is locked bit
4-2 unused bits
1 = DOS 2.0 file indicator bit
0 = file open for output bit
1-2 File length in sectors
3-4 Start sector
5-12 File name
13-15 File name extender

III. Boot Sectors

These sectors contain the autoboot program which loads and executes DOS.SYS. Most commercial disk based software is also in the form of boot files. These files use all 128 bytes in each sector and have no link information. Therefore, boot files must start at sector 1 and continue sequentially to the end of the file. Boot files require a six bit header in the following format:

0 This byte is always 0
1 Number of sectors to load
2-3 Load address
4-5 Run address

IV. VTOC Sectors

VTOC is an acronym for "volume table of contents". It occupies sector 360 and keeps track of every sector on the disk. Bytes

10-127 are the sector bit map for single density disks and bytes 5-127 for enhanced density. A zero bit means the sector is in use and a one bit means the sector is free. Bytes 0-4 contain the following information:

0 Use byte
1=DOS 1.0
2=DOS 2.0 or 2.5
1-2 Total number of sectors
3-4 Number of free sectors

Some of you may have noticed that the numbers I have given you don't add up for enhanced density disks, ie., how can you represent 1040 sectors with 927 VTOC bits? I don't know why, but DOS 2.5 does make it work. Perhaps it uses additional sectors above the 720 sector line where my sector editor can't reach, but perhaps some programmer will come who is mightier than I to explain these mysteries to you. Or then again, maybe this is the sort of thing we find out about when we die.

Acknowledgements

This article has drawn heavily on an article that appeared in the ANALOG Compendium, "Disktool Rev. 3" by Tony Messina. I heartily recommend this article to anyone who wants to learn more about the raw data I have presented. For examples of how to read and write to the hidden sectors, see ANALOG #47, Oct '86, "Disk File", by Charles Steinman.

(Editor's note - Thanks again Robert Johnstone for typing this.)

LOOK FOR BBS REPORT IN NEXT
MONTH'S NEWSLETTER.

In the meantime, our SYSOP,
Robert Johnstone wishes you all

Merry Christmas and

a Happy New Year